Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Original) A method to elicit a systemic, non-antigen-specific immune response in a mammal, comprising administering to said mammal a therapeutic composition by a route of administration selected from the group consisting of intravenous and intraperitoneal, said therapeutic composition comprising:

a. a liposome delivery vehicle; and

b. an isolated nucleic acid molecule selected from the group consisting of:

i. an isolated nucleic acid molecule consisting of a nucleic acid molecule that does not express a peptide or protein; and

ii. an isolated nucleic acid vector without a gene insert, or a fragment thereof;

wherein said therapeutic composition elicits a systemic, non-antigenspecific immune response in said mammal.

2. (Original) The method of claim 1, wherein said route of administration is intravenous.

3. (Original) The method of claim 1, wherein said nucleic acid molecule comprises a non-coding nucleic acid sequence.

4. (Original) The method of claim 1, wherein said liposome delivery vehicle comprises lipids selected from the group consisting of multilamellar vesicle lipids and extruded lipids.

5. (Original) The method of claim 1, wherein said liposome delivery vehicle comprises multilamellar vesicle lipids.

6. (Original) The method of claim 1, wherein said liposome delivery vehicle comprises cationic liposomes.

7. (Original) The method of claim 1, wherein said liposome delivery vehicle comprises pairs of lipids selected from the group consisting of DOTMA and cholesterol; DOTAP and cholesterol; DOTIM and cholesterol; and DDAB and cholesterol.

8. (Original) The method of claim 1, wherein said liposome delivery vehicle comprises DOTAP and cholesterol.

9. (Original) The method of claim 1, wherein said nucleic acid molecule does not comprise a bacterial nucleic acid sequence.

10. (Original) The method of claim 1, wherein said composition has a nucleic acid to lipid ratio of about 1:1 to about 1:64.

11. (Original) The method of claim 1, wherein administration of said therapeutic composition elicits a systemic, anti-viral immune response in said mammal.

12. (Original) The method of claim 1 , wherein administration of said therapeutic composition elicits a systemic, anti-tumor immune response in said mammal.

13. (Original) The method of claim 1, wherein administration of said therapeutic composition results in a reduction in a tumor in said mammal.

14. (Original) The method of claim 1, wherein administration of said therapeutic composition elicits a systemic, protective immune response against allergic inflammation in said mammal.

15. (Original) The method of claim 1, wherein administration of said therapeutic composition increases production of IFNγ in said mammal.

16. (Original) The method of claim 1, wherein administration of said therapeutic composition increases natural killer (NK) cell activity in said mammal.

17. (Original) The method of claim 1, wherein said therapeutic composition further comprises a recombinant nucleic acid molecule having a nucleic acid sequence encoding a cytokine, said nucleic acid sequence being operatively linked to a transcription control sequence.

18. (Original) The method of claim 17, wherein said cytokine is selected from the group consisting ofinterleukin-2 (IL-2), interleukin-12 (IL-12) and interferon-γ (IFNγ).

19. (Original) The method of claim 1, wherein said mammal is selected from the group consisting of humans, dogs, cats, mice, sheep, cattle, horses and pigs.

20. (Original) The method of claim 1, wherein said mammal is a human.

21. (Original) A method to elicit a systemic, non-antigen-specific immune response in a mammal, comprising administering to said mammal a therapeutic composition comprising:

a. a liposome delivery vehicle; and

b. an isolated non-coding nucleic acid sequence, wherein said therapeutic composition elicits a systemic, non-antigen-specific immune response in said mammal.

22. (Original) A method to elicit a systemic, non-antigen-specific immune response in a mammal, comprising administering to said mammal a therapeutic composition comprising:

a. a liposome delivery vehicle; and

b. an isolated non-coding nucleic acid sequence, wherein said therapeutic composition elicits a systemic, non-antigen-specific immune response in said mammal.

23. (Original) The method of claim 1, wherein said isolated nucleic acid molecule of (i) is selected from the group consisting of:

1) an isolated nucleic acid molecule consisting of a nucleic acid sequence from the coding strand of a DNA molecule, wherein said molecule does not express a peptide or protein;

2) an isolated nucleic acid molecule consisting of a nucleic acid sequence from an RNA molecule, wherein said molecule does not express a peptide or protein; and,

3) a chemically synthesized nucleic acid molecule consisting of a nucleic acid sequence that is not a sequence from a naturally occurring nucleic acid molecule.

24. (Original) The method of claim 1, wherein said isolated nucleic acid molecule consists of an isolated nucleic acid vector without a gene insert, or a fragment thereof.

25. (Original) The method of claim 1, wherein said isolated nucleic acid molecule consists of a nucleic acid sequence that encodes a peptide or a protein, but wherein said peptide or protein is not expressed by said nucleic acid molecule.

26. (Original) The method of claim 1, wherein said isolated nucleic acid molecule consists of a nucleic acid sequence that is from a regulatory region of a DNA or RNA molecule.

27. (Original) The method of claim 1, wherein said isolated nucleic acid molecule consists of a nucleic acid sequence that is from an intron.

28. (Original) The method of claim 1, wherein said isolated nucleic acid molecule is an oligonucleotide.

29. (Original) The method of claim 1, wherein said isolated nucleic acid molecule contains CpG moieties.

30. (Original) A method to elicit a systemic, non-antigen specific, immune response in a mammal that has cancer, wherein said immune response inhibits or reduces cancer

growth in said mammal, said method comprising administering to said mammal a therapeutic composition comprising:

a. a liposome delivery vehicle; and

b. an isolated nucleic acid molecule selected from the group consisting of:

i. an isolated nucleic acid molecule consisting of a nucleic acid molecule that does not express a peptide or protein; and

ii. an isolated nucleic acid vector without a gene insert, or a fragment thereof.

31. (Original) The method of claim 30, wherein said composition is administered by a route selected from the group consisting of intravenous administration, intraperitoneal administration, and direct administration to the site of said cancer.

32. (Original) A method to elicit a systemic, non-antigen-specific, anti-viral immune response in a mammal, comprising administering to said mammal a therapeutic composition comprising:

a. a liposome delivery vehicle; and

b. an isolated nucleic acid molecule selected from the group consisting of:

i. an isolated nucleic acid molecule consisting of a nucleic acid molecule that does not express a peptide or protein; and

ii. an isolated nucleic acid vector without a gene insert, or a fragment thereof.

33. (Original) A method to elicit a systemic, non-antigen-specific, immune response in a mammal, wherein said immune response reduces allergic inflammation in said mammal, comprising administering to said mammal a therapeutic composition comprising:

a. a liposome delivery vehicle; and

b. an isolated nucleic acid molecule selected from the group consisting of:

i. an isolated nucleic acid molecule consisting of a nucleic acid molecule that does not express a peptide or protein; and

ii. an isolated nucleic acid vector without a gene insert, or a fragment thereof.

34. (Original) A method to elicit an immune response in a mammal, comprising administering to said mammal a therapeutic composition, said composition comprising:

a. a cationic liposome delivery vehicle; and

b. at least two nucleotides joined together by a phosphodiester linkage,

wherein said nucleotides elicit said immune response by a non-antigen specific pathway.